

I/O

MODULE SPECIFICATIONS



duTec



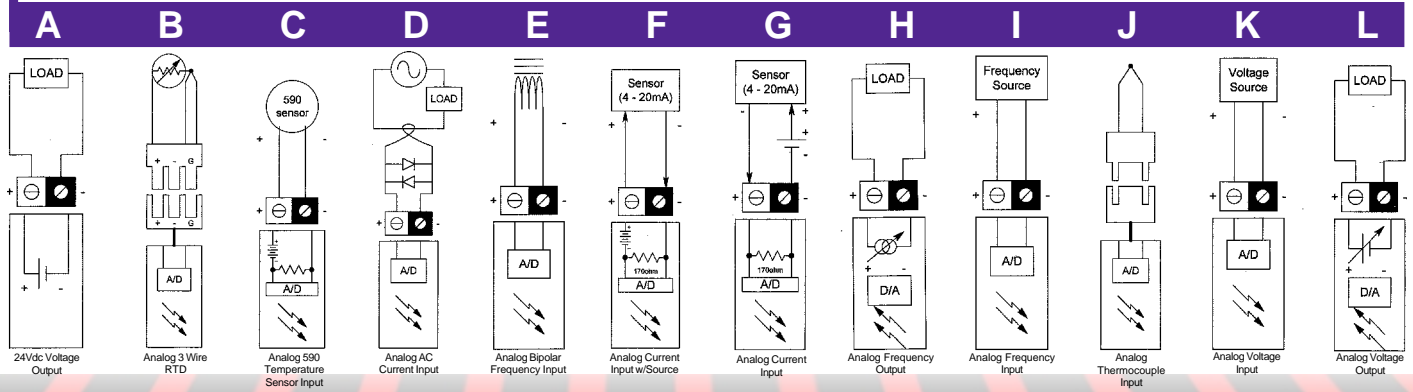
**duTec's remote I/O products give you the
VERSATILITY, FLEXIBILITY & COMPATIBILITY
to interface with virtually anything!**

duTec has the most comprehensive variety of analog modules in the industry.

Advanced engineering allows the I/O products to interface with almost any sensor or actuator of any process.

A N A L O G M O D U L E S

| ANALOG INPUT MODULES | | Range | Resolution (12 bits) | Input Res. nom. ohms | Accuracy @25°C | Drift ppm/°C Gain Offset | Connect Color | Notes | Figure | |
|----------------------|--|--------------|----------------------|----------------------|----------------|--------------------------|---------------------------------------|--|--------|---|
| Voltage | IV25M | 0-25 mVdc | 6.10µV | 100K | ±0.1% FS | 55 20 | | | K | |
| | IV50M | 0-50 mVdc | 12.21µV | 100K | ±0.1% FS | 55 20 | | | K | |
| | IV100M | 0-100 mVdc | 24.41µV | 100K | ±0.1% FS | 55 20 | | | K | |
| | IV250M | 0-250 mVdc | 61.04µV | 100K | ±0.1% FS | 55 20 | | | K | |
| | IV500M | 0-500 mVdc | 122.07µV | 100K | ±0.1% FS | 55 20 | | | K | |
| | IV1 | 0-1 Vdc | 0.24µV | 100K | ±0.1% FS | 55 20 | | | K | |
| | IV5 | 0-5 Vdc | 1.22µV | 100K | ±0.1% FS | 55 20 | | | K | |
| | IV5B | 5-5 Vdc | 2.44mV | 100K | ±0.1% FS | 55 20 | | | K | |
| | IV10 | 0-10 Vdc | 2.44mV | 100K | ±0.1% FS | 55 20 | | | K | |
| | IV10B | -10-10 Vdc | 4.88mV | 100K | ±0.1% FS | 55 20 | | | K | |
| | IV30 | 0-30 Vdc | 7.32mV | 100K | ±0.1% FS | 55 20 | | | K | |
| | IVAC | 28-140 Vac | 34.20mVac | 1.5Meg | ±0.1% FS | 55 20 | | 70.7% average peak | K | |
| | IVACA | 56-280 Vac | 68.40mVac | 1.5Meg | ±0.1% FS | 55 20 | | 70.7% average peak | K | |
| | Current | II420 | 4-20 mAadc | 3.91µV | 170 | ±0.1% FS | 55 20 | 275 ohm maximum loop resistance | | G |
| II420-S | | 4-20 mAadc | 3.91µV | 170 | ±0.1% FS | 55 20 | Provides loop current into 500 ohms | | F | |
| IIAC5 | | 0-5 Aadc | 1.22mA | 0.02 | ±0.1% FS | 55 20 | Current transformer used for > 5 AacD | | D | |
| Temperature | Thermocouples - cold junction compensated, linearized by duTec I/O controllers | | | | | | | | | |
| | ITCE | 0-435°C | 0.11°C | | ±3°C | | Purple | All thermocouples include mating connector for sensor to module connection | | J |
| | ITCJ | 0-700°C | 0.17°C | | ±3°C | | Black | | J | |
| | ITCJ-1 | 80-750°C | 0.20°C | | ±3°C | | Black | | J | |
| | ITCK | 100-924°C | 0.25°C | | ±3°C | | Yellow | | J | |
| | ITCK-1 | 110-1024°C | 0.28°C | | ±3°C | | Yellow | | J | |
| | ITCR | 0-960°C | 0.23°C | | ±3°C | | Green | | J | |
| | ITCR-1 | 0-1760°C | 0.43°C | | ±3°C | | Green | | J | |
| | ITCS | 0-1034°C | 0.25°C | | ±3°C | | Green | | J | |
| | ITCS-1 | 0-1760°C | 0.43°C | | ±3°C | | Green | | J | |
| | ITCT | 200-244°C | 0.10°C | | ±3°C | | Blue | | J | |
| | ITCT-1 | 120-400°C | 0.13°C | | ±3°C | | Blue | | J | |
| | ITCT-2 | 0-150°C | 0.04°C | | ±3°C | | Blue | | J | |
| | RTD's | ITR100 | 50-350°C | 0.10°C | 100 | ±0.8°C | | | White | |
| ITR100-1 | | 0-100°C | 0.02°C | 100 | ±0.8°C | | White | | | B |
| Temp. Sensor | ITP590 | 188-150°C | 0.08°C | | ±0.3°C | | | | C | |
| | ITP590-1 | 50-50°C | 0.05°C | | ±0.3°C | | | | C | |
| Frequency | IDC5NP | 0-100Hz | 0.04 Hz | 1.8 K | ±1 Hz | | | | I | |
| | IDC5D | 0-500Hz | 0.04 Hz | 1.2 K | ±1 Hz | | | | I | |
| | IDC5Z | 0-500Hz | 0.04 Hz | 10 K | ±1 Hz | 55 20 | | Low level input signal 0.2-32 V | I | |
| | IF2.5K-B | 0.3-2.5 KHz | 0.61 Hz | | ±0.1% FS | 55 20 | | Magnetic pickups, ±0.2-10 V | E | |
| | IF5K-B | 0.3 - 5 KHz | 1.22 Hz | | ±0.1% FS | 55 20 | | Magnetic pickups, ±0.2-10 V | E | |
| | IF10K-B | 0.3 - 10 KHz | 2.44 Hz | | ±0.1% FS | 55 20 | | Magnetic pickups, ±0.2-10 V | E | |
| | IF2.5K-L | 0-2.5 KHz | 0.61 Hz | 10 K | ±0.1% FS | 55 20 | | | I | |
| | IF5K-L | 0-5 KHz | 1.22 Hz | 10 K | ±0.1% FS | 55 20 | | | I | |
| IF10K-L | 0 - 10 KHz | 2.44 Hz | 10 K | ±0.1% FS | 55 20 | | | I | | |



A N A L O G M O D U L E S

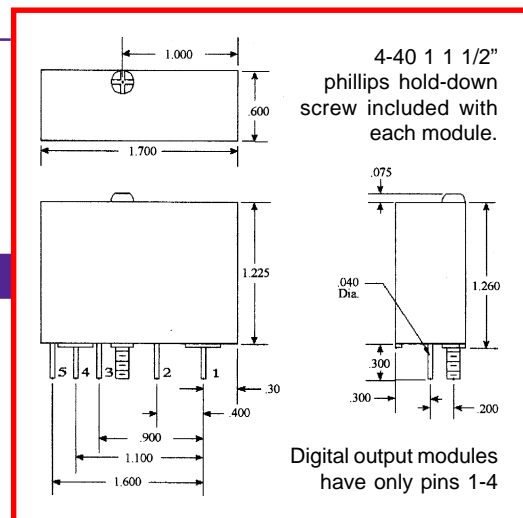
| ANALOG OUTPUT MODULES | | Range | Resolution (12 bits) | Input Res. nom. ohms | Accuracy @25°C | Drift ppm/°C Gain Offset | Notes | Figure |
|-----------------------|--------------------------------------|-----------|----------------------|----------------------|----------------|--------------------------|---|--------|
| Analog Volts | 0V5 | 1.22 MvAC | 1.22 MvAC | | ±0.2% FS | 55 20 | Provides output voltage | L |
| | 0V10 | 2.44MvAC | 2.44MvAC | | ±0.2% FS | 55 20 | Provides output voltage | L |
| Analog Current | 01420 | 3.91 UaDC | 3.91 UaDC | | ±0.2% FS | 55 20 | Provides current for up to 275 ohm loop | H |
| Power Supply | SPS-1 24 Vdc open circuit; 30 mA max | | | | | | Can provide loop power for I1420s | A |

D I G I T A L M O D U L E S

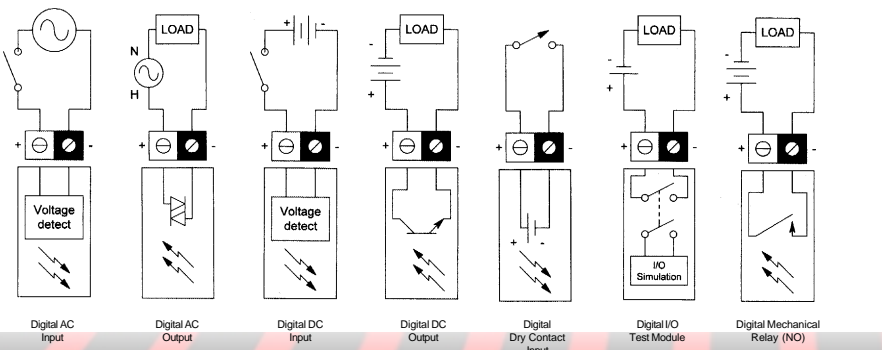
| DIGITAL INPUT MODULES | | Range max volts | Load Current, Amps Cont Min Surge | | | ON min | OFF max | Sat volts | OFF-to-ON Delay, mSec | ON-to-OFF | Input Res. nominal ohms | Label Color | dV/dt Static | Leakage current mA | Figure |
|------------------------|-----------------------|-----------------|-----------------------------------|------|------------------|---------|---------|-----------|-----------------------|-----------|-------------------------|-------------|--------------|--------------------|--------|
| AC | IAC5 ^{1,2} | 140 rms | - | - | - | 90 rms | 25 | - | 20 | 20 | 22 K | Yellow | | | M |
| | IAC5A ^{1,2} | 280 rms | - | - | - | 180 rms | 50 | - | 20 | 20 | 60 K | Yellow | | | M |
| DC | IDC5D ^{1,2} | 32 dc | - | - | - | 3 dc | 1 | - | 0.2 | 0.4 | 1.8 K | White | | | O |
| | IDC5NP ^{1,2} | 32 dc | - | - | - | 10 dc | 1 | - | 5 | 5 | 1.8 K | White | | | O |
| Contact Test | IDC5S T101 | 120 ac/dc | 5 | 0 | | | | | Manual | Manual | | White | | | Q |
| DIGITAL OUTPUT MODULES | | | | | | | | | | | | | | | |
| AC | OAC5 | 140 rms | 3.5 | 0.03 | 80 ⁴ | 24 rms | 1.5 | | 0.5 Hz | 0.5 Hz | | Black | 3 | 0.5 | 2 rms |
| | OAC5A | 280 rms | 3.5 | 0.03 | 80 ⁴ | 24 rms | 1.5 | | 0.5 Hz | 0.5 Hz | | Black | 3 | 0.5 | 4 rms |
| DC | ODC5 | 60 dc | 3.5 | - | 5 ⁵ | 3 dc | 1.2 | | 20 | 50 | | Red | | | 1.5 dc |
| | ODC5A | 200 dc | 1 ³ | - | 1.5 ⁵ | 4 dc | 1.8 | | 75 | 750 | | Red | | | .01 dc |
| Contact Test | ODCR5 T101 | 10 VA 120 ac/dc | 5 | 0 | | | | | 500 | 600 | | Red | | | |

Notes ¹ UL File number E58635 ⁴One cycle
² Isolation 4,000 Vrms ⁵One second
³ 1 A @ 45°C, derate 18 mA/°C

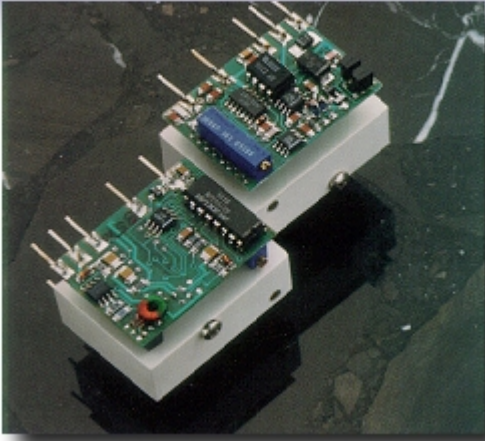
Digital modules are interchangeable with industry standard modules of the same type.



M N O P Q R S



INNOVATIVE I/O SINCE 1977



Mix and Match Analog & Digital with duTec's Remote I/O Products

Real-world process control is a mixture of analog and digital I/O. Open architecture systems from duTec provide proven, cost-effective solutions that optimize your capabilities. Our I/O products can be controlled from a remote host PC, operate as a STANDALONE controller or both.

- duTec's industrial I/O controllers can be populated with any mixture of analog or digital, input or output, ac or dc modules. Because real world process control systems use a wide variety of signal types, single-point packaging lowers total system costs, simplifies troubleshooting, and reduces back-up inventory requirements.
- Omni-isolated I/O modules provide point-to-point, point-to-logic and point-to-power supply protection from accidental damage to controllers or computers and prevent ground-loops.
- The command instructions, a superset of the Optomux™ protocol, is supported by over 30 third party MMI and SCADA software packages. I/O products from duTec can operate simultaneously with other products on the same network using the same software.
- No jumpers-baud rates and communication addresses are set by an on-board push button or remotely by the host. A continuous display verifies the selected baud rate and addresses. It operates over RS-232/422/485 networks from 300 to 38,400 baud.
- Built-in LCF's (Local Control Functions) add Stand-Alone remote control for faster, more predictable real-time response. LCF's include logic gates, analog compare and math, dead-band and PID controllers, and ladder logic.
- The Windows™ based LCF Program Generator software configures the interactions between analog and digital I/O modules and LCF Blocks to perform complex operations.
- Comprehensive high temperature product testing and readily available technical support ensure worry-free installation operation and product satisfaction for your customer.

duTec

4801 James McDivitt Road
P.O. Box 964
Jackson, Michigan 49204

The historic achievements of duTec's founder, John Duté, have made the company a leader in control innovations. His previous company, Information Instruments, Inc., in partnership with General Motors, developed the earliest computer-controlled production equipment. He later invented the Standard Machine Controller or PLC. duTec's progressive I/O technology is in high demand, and has been licensed to others in the industry.

Phone: 517/750-4700, in N.A. 800/248-1632 **Fax:** 517/750-4740
E-mail: dutec@aol.com **Website:** <http://www.remoteIOcontrol.com>

*For More detailed information or
to receive a full catalog, contact:*



Don Johns Engineering

1312 West Lake Street
Chicago, IL 60607
Phone 312.666.3535
Fax: 312.666.0777

7919 Third Street Road
Louisville, KY 40214
Phone 502.366.3535
Fax 502.368.2221

Email: customerservice@donjohnsengr.com

www.donjohnsengr.com

a world of automation